find Search the file tree

CONCEPTS

find walks every path you give it and tests each file against the expression, left to right. Quote patterns so the shell does not expand them.

Start paths where to look
↓ options
Options depth, symlinks
↓ tests
Tests name, type, size, time
↓ actions
Actions print, exec, delete

Without an action, find prints matches (-print). Test a command with -print before you switch to -delete or -exec.

NAME & TYPE

`find <dir> -name '<glob>'`
Match the file name

`find <dir> -iname '<glob>'`
Match name, ignore case

`find <dir> -type f`
Regular files only

`find <dir> -type d`
Directories only

`find <dir> -type l`
Symbolic links only

`find <dir> -path '<glob>'`
Match the whole path

SIZE & TIME

`find <dir> -size +<n>M`
Larger than n MiB

`find <dir> -size -<n>k`
Smaller than n KiB

`find <dir> -empty`
Empty files and directories

`find <dir> -mtime -<n>`
Modified in the last n days

`find <dir> -mtime +<n>`
Modified more than n days ago

`find <dir> -mmin -<n>`
Modified in the last n minutes

`find <dir> -newer <file>`
Newer than a reference file

SIZE & TIME (cont.)

`find <dir> -newermt '<date>'`
Modified after a date

OWNER & PERMISSIONS

`find <dir> -user <name>`
Owned by a user

`find <dir> -perm 644`
Exactly these mode bits

`find <dir> -perm -u+x`
All listed bits set

DEPTH & PRUNING

`find <dir> -maxdepth <n>`
Descend at most n levels

`find <dir> -mindepth <n>`
Ignore the top n levels

`find <dir> -name <d> -prune -o -print`
Skip a directory tree

COMBINING

`find <dir> -name '*.c' -o -name '*.h'`
Either pattern (OR)

`find <dir> ! -name '<glob>'`
Negate a test

`find <dir> \( <a> -o <b> \) <c>`
Group with parentheses

ACTIONS

`find <dir> -print0`
Print NUL-separated names

`find <dir> -exec <cmd> {} \;`
Run command once per file

`find <dir> -exec <cmd> {} +`
Batch files per command

`find <dir> -delete`
Delete matches

XARGS

`find <dir> -print0 | xargs -0 <cmd>`
Pipe names safely

`xargs -0 -I {} <cmd> {}`
Place name inside a command